R-BOAT *PIRATE*
The Center for Wooden Boats
Seattle
King County
Washington

HAER WA-187
HAER WA-187

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

R-BOAT *PIRATE*

HAER No. WA-187

Location:	The Center for Wooden Boats, Seattle, King County, Washington
Rig/Type of Craft:	Marconi $^{3}/_{4}$ Rig Racing Sloop
Trade:	Racing/ Recreation
Official Number:	R-11
Principal Dimensions:	Length: 40'-3" (oa) Beam: 8'-6" Draft: 5'-5" Displacement: 10,900 lbs (The listed dimensions are current, but it should be noted that draft, displacement, and tonnages were subject to alterations to trim as well as variations in measurement.)
Propulsion:	Sail
Date of Construction:	1926
Original Owners:	Don and Tommy Lee
Present Owner:	The Center for Wooden Boats
Disposition:	Museum exhibit
Significance:	R-boat *Pirate*, fully restored from 1999 to 2005, is the best extant example of the R-class. *Pirate* also embodies the most advanced skills and talents in both yacht design and construction in the Seattle area in the early twentieth century. The sloop won the National Championship in its class in 1929 and has the reputation of being one of the fastest R-boats ever built.
Project Information:	From the summer through the winter of 2009, The Center for Wooden Boats (CWB) documented the 16' Salish Canoe (see HAER No. WA-188) and R-Boat *Pirate*, which was made possible by a grant from 4Culture. The documentation produced will be used to create a new interpretation

exhibit onsite at CWB and emphasize the center's mission to interpret Northwest small craft history. In addition, this project fits into CWB's broader vision of becoming a regional documentation center affiliated with the National Park Service. The primary consultant to this project is Todd Croteau, HAER Maritime Program Coordinator. The project director is Heron Scott, CWB's Lead Boatwright, with assistance from CWB staff members Shelly Leavens and Andrew Washburn. Volunteers involved in the documentation include Tim Barney, Scott Rohrer, David Kennedy, and Paul Marlow. Bob Boyce produced LIDAR scans of the vessel.

PART I: HISTORICAL INFORMATION

A. Physical History:

1. Date of Construction: 1926

2. Designer: L.E. "Ted" Geary, Seattle, Washington

3. Builder: Lake Union Dry Dock, Seattle, Washington

4. Original Plans: An August 1925 "Sail & Rigging Plan" shows the original design of *Pirate*. A copy of this drawing is included in the field records accompanying this documentation. A vessel description can be found in Part II, Section A below.

5. Alterations and Additions: Shortly after the 1932 installation of the engine and propeller shaft, Ted Geary had them removed to prepare the boat for more serious racing. In addition, he redesigned the boat's sail and rigging plans to allow the use of flatter Genoa jibs sheeted closer to the mainsail. This was popularly known as the "Diamond Rig" by sailors of the time. The spreaders were moved to a point halfway between the forestay and the deck. The top attachment point of the upper shrouds was moved down to the forestay connection. A set of upper diamond struts measuring the same length as the spreaders were added at the same place. To control tip bend fore and aft, a jumper strut was fitted from the forestay tang to the head stay, and a smaller jumper was rigged on its own stay above the forestay. The foretriangle height (P2) was increased from 31' to 35'-4", while the base (J) was kept at 10'. This increased area forward in the plan was offset by a reduction of 14" off the foot of the mainsail, while the gooseneck was raised 18". At the same time, an 18" boomkin was added at the stern to attach a standing backstay. This brought the overall length of the vessel to 40'-3". The last additions were jib sheet winches at the aft end of the house top, port and starboard, to trim the larger jibs.

From 1999-2005, The Center for Wooden Boats undertook a restoration of *Pirate*.

B. Historical Context: R-boat racing the Pacific began in Seattle in 1913 when Sir Thomas Lipton donated a lavish silver cup to be raced for in R-boats. The following year, a four boat fleet of Rs competed for the new trophy on Seattle's Elliott Bay. After defeating would-be American defenders *Spray* and *Defender*, Ted Geary's *Sir Tom* (so named to honor the baronet) dominated *Turenga* from Royal Vancouver Yacht Club to capture the cup. Geary and *Sir Tom* went on to win the Lipton every year until 1928.

In the spring of 1925, yachtsman Don Lee of Los Angeles challenged his son Tommy to win the Pacific Coast Star Championship. If Tommy won, Don would gift his son a new R-boat. Lee sailed his Star *Satellite* to victory at the Pacific Coast Yachting Association (PCYA) regatta in Victoria, British Columbia. On April 10, 1926, R-boat *Pirate*, designed by Seattle Naval Architect Ted Geary and built at the Lake Union Dry Dock, was christened and launched on Lake Union. True to his word, Don Lee commissioned *Pirate* for his son Tommy. The

proceedings were recorded in photographs by the renowned firm of Webster-Stevens. That same year, the Lake Union Dry Dock began building the first of the legendary "Lake Union Dreamboat" line of motor yachts.

Pirate became the subject of a unique program in 1927 when the Hearst newspapers commissioned Ted Geary to adapt the R-boat design to a $^{1}/_{12}$ scale model for schoolboys to build and race. Regattas using the model R-boats were held at Westlake (now MacArthur) Park in Los Angeles and Seattle's Green Lake. "*Pirate* Pond Boats" are still built and raced at The Center for Wooden Boats.

In 1928, Tommy Lee sold *Pirate* to Roger Marchetti. The following year, O.K. Hunsaker purchased the boat. *Pirate* was then sold to Arthur Stewart, son of William L. Stewart (late president of Union Oil Company of California) in 1932. Just two years later, *Pirate* was again sold, this time to Mrs. Rhoda (Rindge) Adamson, who named Ted Geary as sailing master and co-helmsman. *Pirate* remained under Adamson's ownership until 1952, when it was gifted to Merritt Adamson, Jr. and Sharon (Geary) Adamson, the daughter of Ted Geary, at their wedding. In 1964, *Pirate* was sold to Brooks Barnhill and Morton Caplan of Los Angeles. At some point, the boat ended up in the possession of Mrs. Adele Jacobson of Oxnard, California, who donated her to the Blue Whale Sailing School of Santa Barbara in the late 1990s. *Pirate* was later donated to The Center for Wooden Boats in 1999 and restored from 1999 to 2005.

C. Operational History: *Pirate* was a 20-rater and raced on closed courses, even winning the National Championship in its class in 1929. Currently, the boat is moored year-round at the CWB and serves as an active, floating exhibition. A dedicated group of volunteers manages the boat and sails it to heritage events within the region.

PART II: STRUCTURAL/DESIGN INFORMATION

A. General Description:

1. Overall: *Pirate* has been measured for rating (20' max) by an official international measurer and has been certified to be in-class. The vessel's calculated minimum displacement under the rule is 10,850 pounds. When weighed on a certified digital scale, the vessel was 10,900 pounds—just 50 pounds overweight after eighty-three years. This is due to no liberties being taken with original materials, methods, and scantlings in the restoration process.

The following description has been transcribed with minor edits from "Construction Details—R Class Sloop Pirate" which gives the original as drawn (1925) details along with notes on details, fasteners, and exceptions as found during the restoration process

from 1999-2005.[1] The appendix to this report contains a certificate of measurement with additional dimensions.

The double-planked hull is $^{5}/_{8}$" Burma Teak over $^{5}/_{16}$" Western red cedar. The outer layer laps over the interior seams and is set in white lead paste. The planking fasteners are square black-iron boat nails. Each inner plank is back-screwed to the outer skin with two brass #8 x $^{7}/_{8}$" round head slot screws in the bays between the frames.

The majority of the frames are steam-bent white oak that is 1-$^{3}/_{4}$" x 1-$^{7}/_{8}$" beveled square to the centerline and gradually tapered from the bilge stringer to the clamp. Every third frame is sawed and doubled white oak, each piece measuring 1" x 1-$^{3}/_{4}$". In the way of the mast and chain plates, all the frames are the "double-flitch" type. All frames are secured to the clamp with $^{1}/_{4}$" black-iron machine screws, with nuts and washers on the interiors. Each frame is boxed into the keel and bolted to sawed teak floor timbers.

The primary structural members are two Douglas fir beams that form the keelson (11" deep, sided 11') and the horn timber. The horn timber (11" deep, sided 11") laps onto the keelson, and the joint is strengthened by a long flat knee fastened by long black-iron drifts and lag screws. This joint is stiffened by the teak deadwood and rudder post aft. There is a small teak stem and cambered teak transom. The centerline is rabbeted over the full length to take the planking.

There is a small teak furring piece at the forward end of the ballast keel to fair into the centerline.

The clamp and shelf are continuous pieces of Douglas fir. The shelf is $^{3}/_{4}$" thick and edge-fit, measuring 3" wide at sta. 5, tapered fore and aft. The shelf is secured to the clamp (4" x 1-$^{1}/_{4}$") by $^{1}/_{4}$" iron machine screws and tapered fore and aft.

The stringers are 34' long, clear, continuous Douglas fir, as drawn in the original construction plans, that measure 2" x 4" at their deepest and taper fore and aft. They are secured to the frames with $^{1}/_{4}$" black-iron machine bolts with square nuts.

The mast step is teak and was sawed and built true to the construction plan, fastened with transverse $^{5}/_{16}$" iron carriage bolts. A 1926 silver "Peace" dollar was found in the step.

2. Deck: The teak sawed deck beams are 1-$^{7}/_{8}$" deep and sided 1-$^{1}/_{4}$" to a constant camber. Each is bolted onto the shelf with two black-iron machine screws with the nuts under. Hanging knees, grown apple crooks, bolt to the beams and frames at the partners and both ends of the deck house.

[1] Scott Rohrer, "Construction Details—R Class Sloop *Pirate*," unpublished material, accessible at The Center for Wooden Boats.

Teak carlins define the cockpit, house, and foredeck hatch profiles. Short deck beams are boxed into the house and hatch carlins. The cockpit margins have small shelves on which the short beams land.

The original construction drawing is vague with regard to the decking. A 1"-thick structure of some composition is indicated, but there is no written reference. By 1999, *Pirate* had a $^{3}/_{4}$" teak deck fastened to the deck beams with #8 x 1-$^{1}/_{4}$" bronze flathead screws. The planks were 2" wide with chamfered edges that formed a groove. There was no caulking. This decking appeared to be thirty to forty-five years old. More recently, a $^{1}/_{4}$"-thick plywood skin was installed over the flooring compound and fastened with stainless-steel screws. Heavy teak covering boards may have been added at the same time. After this was removed, the heavily-rusted remnants of black-iron nails were found in the deck beam tops. This suggests that the beams were probably original and an earlier deck had been replaced at some time.

When the interior trim was removed, a spacer of some kind was evident between the carlin tops and the bottom edges of the house sides. This was later discovered to be two $^{1}/_{4}$" skins of red cedar laid "double diagonal" style. The earliest photographs of *Pirate* show teak decking bent parallel to the deck profile with covering boards and a king plank.

Evidence indicates that the deck house was built on top of the sub-deck with the teak laid up next to it. This ascertains the original composite: $^{1}/_{2}$" subdeck of two skins of red cedar with $^{3}/_{8}$" teak overlay to the class scantling rules. The added stiffness of this structure allowed the builders to omit the lodging knees indicated in the original drawing. There was no evidence of them on the deck beams.

The deck house faces are single pieces of 1" teak with teak corner posts. Early photographs of the boat indicate that the smaller square hatch in the drawing was not built. Likewise, the two small beams drawn in the sliding hatch cover appear to have been a drafting error. The window profiles taper as they go forward. The opening port lights in the forward face appear in the earliest photographs. The opening port in the house top just ahead of the companionway is original. The teak housetop beams have been sawed to a changing camber, 1-$^{1}/_{4}$" deep sided, and set into notches on the house sides.

The house top is $^{5}/_{8}$" thick, double-diagonal planked red cedar fastened to the beams with boat nails. Painted cotton deck-grade duck canvas covers the housetop planking. The edges of the duck canvas are secured under broad, raised teak boards that form a handrail on all four sides, which were extant in 1999.

A lightly-built teak frame forms the cockpit with sides of $^{5}/_{16}$" solid red cedar reinforced locally. The cockpit sole sits on 3 $^{1}/_{2}$" x 1" beams and is planked with $^{3}/_{4}$" red cedar with splined seams. The canvas duck covering is painted with the edges drawn up under the teak trim pieces.

Archived photographs from 1926 to 1929 show deck hardware consistent with the construction drawings. A 1926 advertisement featuring *Pirate*'s suppliers listed Merriman Bros. of Boston as the hardware vendor. The advent of Genoa jibs, symmetrical spinnakers, and the new "diamond" rig radically altered the way successful racers were sailed and equipped. Owners of earlier craft were forced to adapt their boats to the new way if they hoped to be successful in the 1930s. Halyard and sheet winches were added along with two-ended spinnaker poles and their gear. By 1999, very little of *Pirate*'s original deck hardware remained. The extant fittings included the forestay "comb," opening port light in house top, 10'-long x 1-$^1/_4$"-wide bronze flat tracks, cast bronze builder's plaque, and bronze master partner brackets. All but the last item also showed evidence of nickel plating.

B. Rig:

1. Rig and Sails: The 50'-long, hollow Sitka spruce mast was blocked solid at the partners, gooseneck, and masthead. The maximum diameter of 6" at the deck, per class rules, tapered to 2-$^1/_2$" at the top. Period photographs show the mast stayed as drawn, using soft eyes and chocks, but the 1934 "diamond" rig stayed using stainless steel cable and rotary swaged terminals pinned to bronze mast tangs. The spar in *Pirate* was confirmed by Norman Blanchard and *Sir Tom* crewman John Kelly to be the final rig in Geary's legendary R, *Sir Tom*, cut up in a Duwamish River boat yard in the early 1960s.

The spreader profiles, jumper strut, and head stay strut are correct to the 1934 re-rigging.

The boom is solid Sitka spruce with twin bridles for sheet blocks and a sliding outhaul car aft. The universal pivoting swiveled bronze gooseneck, secured to the mast with bronze bands, is original to the mast. It is from Pigeon Hollow Spars of Boston. A Merriman Bros. No. 1 outhaul winch is mounted on the starboard side with a handle stowed on the aft side of the mast just above the deck level.

The hollow Sitka spruce Spinnaker pole is just over 13' long per the Rule formulae, with replica end fittings.

2. Other systems: The rudder is planked teak fastened with bronze drifts. The bronze shaft sits in a bronze-sheathed cove at the aft end of the rudder post and fits into a bronze gudgeon on the ballast keel, which is cast alloyed lead weighing approximately 6,000 pounds. The primary means of attachment is a series of 1-$^1/_2$" Tobin Bronze machine screws with their heads cast into the lead. The floor timbers at the ballast are grown crooks 4" deep at c/l tapered for 16" onto the hull. Instead of bolting up with a pair of machine screws at each floor, a bronze bolt sits 3" off-center with a black-iron drift across from it. These fasteners alternate sides, p/s over seven timbers.

PART III. SOURCES OF INFORMATION

A. Primary Sources:

Rohrer, Scott. "Construction Details—R class sloop *Pirate*." Unpublished material, accessible at The Center for Wooden Boats.

"Sail & Rigging Plan, Class R-20 Rater," for Thomas Lee Esq. Seattle, August 1925. Dr. No. 1073. Copy included in field records accompanying this report.

B. Secondary Sources:

Johnson, Larry. "*Pirate*." National Register of Historic Places Registration Form. Listed 29 September 2000.

Rohrer, Scott. "Pirate at The Center for Wooden Boats." Available at http://www.r-boat.org, accessed December 2009.

Appendix: Certificate of Measurement

1927 Universal Rule for R Class Marconi Sloops

	Important: Enter Data in white cells only			rev. 1 May 8 2009	
Yacht:	**Pirate**	Sail #:	**11**	Date measured:	**16/10/09**
Year of build:	**1926**	Designer:	**Ted Geary**	Measured by:(signed)	
Owner:	**The Center for Wooden Boats**				
Address:	**Seattle WA**				

all measurements in decimal feet except as noted
see Appendix G for the definitions of the Abbreviations marked in Bold: XXXxxx

Beam

BWLmax	7.86	1/4 BWLmax	1.96	1/3 BWLmax	2.62
BWLsta	21.23	(feet aft of bow)		1/10 BWLmax	0.79

LWL

LOA	38.54				
fwd overhang OHF	7.40				
aft overhang OHA	5.96	**LWLd**	25.17		
LWL corrections					
Notch aft	0.00				
Concave + Notch fwd	0.00	Total LWL corr	0.00	rated LWL	25.171

QBL

QBLport	24.27	corr QBLport	24.27	**QBL %**	94.98%		
Concave fwd Pt	0.00	corr QBLstbd	24.27	rule QBLmax	23.91		
Concave aft Pt	0.00			corr QBLmeas	24.27		
QBLstbd	24.27	corr QBLmeas	24.27	**QBLexcess / 2**	0.18		
Concave fwd Stbd	0.00			rated LWL	25.17		
Concave aft Stbd	0.00					**L for rating**	25.35

Draft

		avg					
DRsheer	7.44	DRrule	5.78	draft excess x 3	0.00		
DRfbdpt	1.71	**DRmeas**	5.73				
						draft penalty	
DRfbdstbd	1.71	**DRfbdavg**	1.71			DRpen	0.00
DRsta	24.31	(feet aft of bow)					

Displacement

			-				
S.G.meas.	1.003	S.G. correction:	0.022	(+/- change in freeboards)			
weight lbs Dlbs	10850	allowable Wt. max	10847	measured D	169.53		
FBDbow	2.65	allowable Dmax	169.49	measured D^1/3	5.535		
		allowable					
FBDaft	1.79	Dmax^1/3	5.53			**D^1/3r for rating**	5.534
Internal ballast wt.lbs.	0	Internal ballast loc'n	0.00				
Anchor & rode wt.lbs.	0	Anchor & rode loc'n	-5.51	Weight locations are relative to forward side of mast at mast heel: plus = aft, minus = fwd.			
Battery/s weight lbs.	0	Battery/s location	0.00				

Rig & Sails

B	20.83	**MHTrule**	46.23	**MHTpen**	0.00		
		max mainsail					
P	42.35	widths	6.9	3/4 height			
R	1.97		12.7	1/2 height			
BAD	3.82	jib batt max		Mainsail area	440.66		
Mast F&A	0.49	(top & bottom)	1.90	Headsail area	150.34		
P2	35.01	(int)	2.08	Total S.A.	591.00		
Mainsail top width	0.49	(max = 0.54 ft = 6 1/2")		S.A.^1/2	24.310		
J	10.10	**MHTexcess**	-0.07	Pole excess	0	Area	
SPL	12.5	allowable SPL	12.57	Jib Strut	0	Area	
MHTmeas	46.2	pole excess	0.000	Excess mast ht.	0.0	Area	
Max jib foot	9.0	**12.0 max**		Corrected S.A.	591.00		
				Corrected			
Max genoa foot	15.5	**19.0 max**		S.A.^1/2	24.310		
						S.A.^1/2 for rating	**24.310**
Max small spin width	0.0	**19.0 max**					
Spin. leech, luff avg	0.0	**37.5 max**	0	Jib strut deflection			

Rating R = 0.18 *(L* S.A.^1/2)/ D^1/3 = 20.0 max **Rating =** 20.045 **20.0**

I have read the R class rules & I am familiar with my responsibilities under the rule. Signed by owner:

NOTE: B and P2 have had corrections added!!!

NOTE: Wt estimate @ 10,850 lbs

B is shortened 6 1/2" AND the spi halyard block has been lowered 4" to coincide with the forestay intersection